AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of claims:

1. (currently amended) A PEM fuel cell comprising (1) a proton exchange membrane having opposing cathode and anode faces on opposite sides of said membrane, (2) a gas-permeable electrically-conductive current collector engaging at least one of said faces, and (3) a current-collecting plate engaging said gas-permeable current collector ~~and defining~~, said current collecting plate having a gas flow-field confronting said gas-permeable current collector, said gas flow-field comprising a plurality of lands engaging said gas-permeable current collector and ~~defining~~ separating a plurality of gas flow-channels one from the next, ~~each of~~ said gas flow-channels each having (a) an inlet end communicating with a supply manifold that supplies a reactant gas at a first pressure to all of said gas flow-channels, and (b) an exit end communicating with an exhaust manifold that receives said gas from said gas flow-channels, a first flow-restrictor in a first gas flow-channel to reduce said first pressure to a second pressure in said first gas flow-channel downstream of said first flow-restrictor that is less than said first pressure, and a second flow-restrictor in a second flow-channel next adjacent said first flow-channel for maintaining a third pressure in said second gas flow-channel upstream of said second flow-restrictor ~~that is sufficiently above~~ greater than said second pressure and sufficient to drive said gas from said second gas flow-channels into said first flow-channel through such of said gas-permeable current collector as engages the

land separating said first gas flow-channel from said second gas flow-channel.

2. (currently amended) A PEM fuel cell according to claim 1 wherein said gas flow-channels each ~~have~~ has a first cross-sectional area transverse the direction of gas flow through said gas flow-channel, and at least one of said flow-restrictors comprises a constriction in said gas flow-channel having a second cross-sectional area transverse the direction of gas flow through the gas flow-channel that is less said than said first cross-sectional area.

3. (currently amended) A PEM fuel cell according to claim 1 wherein at least one of said flow-restrictors comprises a tortuous segment of said gas flow-channel.

4. (currently amended) A PEM fuel cell according to claim 1 ~~including a plurality of ports each communicating a said manifold with a said flow-channel, and~~ wherein at least one of said flow-restrictors is a said port communicating one of said manifolds with one of said gas flow-channels and sized to provide said second and/or ~~said~~ third pressures.

5. (currently amended) A PEM fuel cell comprising (1) a proton exchange membrane having opposing cathode and anode faces on opposite sides of said membrane, (2) a gas-permeable, electrically-conductive current collector engaging at least one of said faces, and (3) a current-collecting plate engaging said gas-permeable current collector, said current-collecting plate ~~having and defining~~ a gas flow-field confronting said gas-permeable current collector, said gas flow-field comprising a

plurality of lands engaging said gas-permeable current collector and ~~defining~~ separating a plurality of ~~gas-~~ non-serpentine gas flow-channels one from the next, ~~each of~~ said gas flow-channels each having (a) an inlet leg communicating with a supply manifold that supplies a reactant gas at a first pressure to all said gas flow-channels, (b) an exit leg communicating with an exhaust manifold that receives said gas from said gas flow-channels, and (c) at least one medial leg intermediate said inlet and exit legs, a first flow-restrictor in the inlet leg of a first of said flow channels for producing a second pressure in said first gas flow-channel downstream of said first flow-restrictor that is less than said first pressure, and a second flow-restrictor in the exit leg of a second said gas flow-channel next adjacent said first gas flow-channel for maintaining a third pressure in said second gas flow-channel upstream of said second flow-restrictor that is greater than said second pressure and sufficient to drive said gas between said first and second flow-channels through such of said gas permeable current collector as engages the land separating said first gas flow-channel from said second gas flow-channel.

6. (currently amended) A PEM fuel cell according to claim 5 wherein each said flow-channel is branched ~~edat~~ its midsection so as to provide a medial leg having at least first and second branches separated from each other by a land engaging said gas-permeable current collector, each of said branches having a first end communicating with said inlet leg and a second end communicating with said exhaust leg.

7. (currently amended) A PEM fuel cell according to claim 6 wherein said flow-channel medial leg is bifurcated and said first

branch has a third flow-restrictor proximate said first end that reduces the pressure in said first branch down stream of said third flow-restrictor to a fourth pressure that is below said second pressure, and said second branch has a fourth flow-restrictor proximate said exit leg for maintaining a fifth pressure in said second branch upstream of said fourth flow-restrictor sufficient to drive said gas between said first and second branches through such of said gas-permeable current collector as engages the land separating said first and second branches.

8. (currently amended) A PEM fuel cell comprising (1) a proton exchange membrane having opposing cathode and anode faces on opposite sides of said membrane, (2) a gas-permeable electrically-conductive current collector engaging at least one of said faces, and (3) a current-collecting plate engaging said gas-permeable current collector ~~and defining~~ said current collecting plate having a gas flow-field confronting said gas permeable current collector, said gas flow-field comprising a plurality of lands engaging said gas-permeable current collector and ~~defining~~ separating a plurality of non-serpentine gas flow-channels one from the next, ~~each of~~ said gas flow-channels each having (a) an inlet leg for receiving gas at a first pressure from a supply manifold common to all said flow channels, (b) an exit leg for discharging said gas into an exhaust manifold common to all said flow-channels, and (c) first and second medial legs intermediate said inlet and exit legs and separated one from the next by a land, said medial legs each having a first end communicating with said inlet leg and a second end communicating with said exit leg, said first medial leg having a first flow-restrictor proximate said first inlet leg that reduces

the pressure in said first medial leg down stream of said first flow-restrictor to a second pressure that is below said first pressure, and said second medial leg has a second flow-restrictor proximate said exit leg for maintaining a third pressure in said second medial leg upstream of said second flow-restrictor that is greater than said second pressure and sufficient to drive said gas between said first and second medial legs through such of said gas-permeable current collector as engages the land separating said medial legs.